



VEPGA LED Rate Negotiation Team Meeting

September 15, 2011

Outdoor Lighting Rates

Enclosed Flat Lens



Enclosed Flat Lens

The Enclosed Flat Lens luminaire provides a full cut-off distribution for lighting residential roadways and smaller parking areas.

- Cast aluminum housing with a grey paint finish.
- Flat glass lens with a **Type III** distribution directs all light down.
- High pressure sodium lamping in 70, 100, 150, 250, and 400 watts.

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Basic HPS Luminaires under VEPGA Schedule 150:

- Rates developed assuming installation on wood distribution pole with overhead supply
- Monthly charge \$ 7 to \$20

Outdoor Lighting Rates

Comparison VEPGA Rate Schedule 150 - Basic (Type1) High Pressure Sodium Rate Formulation Data 05-02-2011						
	70W HPS	100W HPS	150W HPS	250W HPS	400W HPS	
Billed Monthly kWh:	30	40	70	105	160	
Input Wattage (kW):	0.082	0.120	0.202	0.315	0.490	
Annual kWh:	360	480	840	1260	1920	
Installation Cost						
Conductor and Hardware (Labor & Material):	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94	
Pole (Labor & Material):	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57	
Luminaire (Labor & Material):	\$466.41	\$467.56	\$471.16	\$509.51	\$535.80	
Total Installation Cost:	\$881.92	\$883.07	\$886.67	\$925.02	\$951.31	
Maintenance Cost						
Annual Maintenance Cost:	\$7.79	\$7.79	\$7.83	\$8.48	\$9.22	
Reference HPS Luminaire Direct Cost	\$58.00	\$58.00	\$61.00	\$98.00	\$141.00	
Monthly Billing Rate:	\$7.03	\$7.65	\$9.05	\$12.59	\$19.09	
Four Year Revenue:	\$337.44	\$367.20	\$434.40	\$604.32	\$916.32	
"Typical" CIAC Requirement:	\$544.48	\$515.87	\$452.27	\$320.70	\$34.99	
Rates per VEPGA agreement for use on and after 04/01/11						
Depreciation of Fixed Assets - FERC 373 - 4.27%/Year - 23 Years						
Annual maintenance cost based on 20% luminaire failure rate in 46,000 hours, and scheduled re-lamping						
Installation Costs from 2009 cost of service study:						
WR 6793542 Rev 11 Streetlight Conductor Overhead #4Al Duplex						
WR 6793546 Rev 34 Wood Pole 35 Foot - adjusted to 1/3 of total cost						
WR 6793547 Rev 30 Enclosed Horizontal Luminaire 70 watt and 6 foot arm						
WR 6793547 Rev 31 Enclosed Horizontal Luminaire 100 watt and 6 foot arm						
WR 6793547 Rev 32 Enclosed Horizontal Luminaire 150 watt and 6 foot arm						
WR 6793547 Rev 33 Enclosed Horizontal Luminaire 250 watt and 6 foot arm						
WR 6793547 Rev 34 Enclosed Horizontal Luminaire 400 watt and 6 foot arm						
Annual Maintenance Cost = (Failure Rate X (Replacement \$ Labor + \$ Material) / Material Lifespan Years) + (Relamping \$ Cost/Freq. Years)						

Outdoor Lighting Rates

Decorative Acorn



Decorative Acorn

The Decorative Acorn style luminaire compliments urban streetscapes and pedestrian lighting applications with high color rendering and cutoff optics.

- Decorative cast aluminum base pod available with a matte black or dark green (fluted pole only) paint finish.
- Top mounted high performance [Type III](#) reflector with clear acrylic globe and black decorative chimney.
- Metal Halide lamping in 100 and 150 watts.
- Decorative composite poles standard.

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Premium MH Luminaires under VEPGA Schedule SMH:

- Rates developed assuming installation on dedicated pole with underground supply
- Monthly charge \$32 to \$43

Outdoor Lighting Rates

Comparison VEPGA Rate Schedule SMH - Premium Metal Halide Rate Formulation Data 09-15-2011				
	100W MH	150W MH	200W MH	320W MH
Billed Monthly kWh:	41	57	76	121
Input Wattage (kW):	0.124	0.174	0.228	0.365
Annual kWh:	492	684	912	1452
Installation Cost				
Conductor and Hardware (Labor & Material):	\$1,024.23	\$1,024.23	\$1,024.23	\$1,024.23
Pole (Labor & Material):	\$1,039.36	\$1,039.36	\$1,039.36	\$1,039.36
Luminaire (Labor & Material):	\$1,002.64	\$1,002.64	\$1,002.64	\$1,002.64
Total Installation Cost:	\$3,066.23	\$3,066.23	\$3,066.23	\$3,066.23
Maintenance Cost				
Annual Maintenance Cost:	\$11.92	\$12.17	\$24.48	\$24.48
Reference MH Luminaire Direct Cost	\$454.00	\$456.00	\$300.00	\$322.00
Monthly Billing Rate:	\$32.47	\$34.10	\$41.09	\$42.83
Four Year Revenue:	\$1,558.56	\$1,636.80	\$1,972.32	\$2,055.84
"Typical" CIAC Requirement:	\$1,507.67	\$1,429.43	\$1,093.91	\$1,010.39
Rates per VEPGA agreement for use on and after 04/01/11				
Depreciation of Fixed Assets - FERC 373 - 4.27%/Year - 23 Years				
Annual maintenance cost based on 20% luminaire failure rate in 60,000 hours, and scheduled re-lamping				
Installation Costs from 2007 cost estimates:				
WR 6886922 Rev 1 Streetlight Conductor UG 4/0Al Triplex/ Fusing/ Grounding/ Trench				
WR 6886922 Rev 2 Decorative Composite Pole				
WR 6886922 Rev 3 Metal Halide Luminaire				
Annual Maintenance Cost = (Failure Rate X (Replacement \$ Labor + \$ Material) / Material Lifespan Years) + (Relamping \$ Cost/Freq. Years)				

“Current Price” Basic LED Lighting Rate

Proposal "A" - VEPGA Rate Schedule SSL - Rate Formulation Data 06-02-2010

	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6	Tier 7	Tier 8
Billed Monthly kWh:	5	15	25	35	45	55	65	75
Input Wattage (kW):	0.015	0.045	0.075	0.105	0.135	0.165	0.195	0.225
Annual kWh:	60	180	300	420	540	660	780	900
Installation Cost								
Conductor and Hardware (Labor & Material):	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94
Pole (Labor & Material):	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57
Luminaire (Labor and Material):	\$869.23	\$986.93	\$1,104.63	\$1,222.33	\$1,340.03	\$1,457.73	\$1,575.43	\$1,693.13
Total Installation Cost:	\$1,284.74	\$1,402.44	\$1,520.14	\$1,637.84	\$1,755.54	\$1,873.24	\$1,990.94	\$2,108.64
Maintenance Cost								
Annual Maintenance Cost:	\$4.97	\$5.64	\$6.31	\$6.98	\$7.66	\$8.33	\$9.00	\$9.68
Reference LED Luminaire Direct Cost	\$400.00	\$500.00	\$600.00	\$700.00	\$800.00	\$900.00	\$1,000.00	\$1,100.00
Monthly Billing Rate:	\$16.26	\$17.83	\$19.40	\$20.98	\$22.56	\$24.14	\$25.71	\$27.29
Four Year Revenue:	\$780.48	\$855.84	\$931.20	\$1,007.04	\$1,082.88	\$1,158.72	\$1,234.08	\$1,309.92
"Typical" CIAC Requirement:	\$504.26	\$546.60	\$588.94	\$630.80	\$672.66	\$714.52	\$756.86	\$798.72

Depreciation of Fixed Assets - FERC 373 - 4.27%/Year - 23 Years

Luminaire life of 70,000 hours - 18 year life span

Annual maintenance cost based on 10% luminaire failure rate in 70,000 hours

Installation Costs from 2009 cost of service study:

WR 6793542 Rev 11 Streetlight Conductor Overhead #4Al Duplex

WR 6793546 Rev 34 Wood Pole 35 Foot - adjusted to 1/3 of total cost

WR 6793547 Rev 32 Enclosed Horizontal Luminaire 150 watt and 6 foot arm - DIRECT MATERIAL ADJUSTED TO REFLECT LED LUMINAIRE COST

Negotiation

During the first meeting of the rate team the VEPGA representatives made the following observations:

- The monthly charges for LED lighting are much higher than existing HPS rates.
- Municipalities may be more inclined to use LED lighting if the monthly rate could be reduced through a higher initial CIAC by the municipality
- No method to address the declining cost of LED equipment is included in the proposed rate structure
- Dominion should share some risk with the municipality in deploying the new technology

Response

Dominion has formulated an alternative rate proposal which will partially address VEPGA concerns.

- Calculated monthly rate/unit in the revised pricing based on anticipated luminaire cost three to five years out
- Initially cost of providing the LED light is absorbed in a higher required CIAC payment from the Customer.

Result:

- Monthly rate/unit is substantially lowered
- Declining cost of LED equipment is addressed

“Expected Price” Basic LED Lighting Rate

Proposal "C" - VEPGA Rate Schedule SSL - Rate Formulation Data 06-06-2011								
	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6	Tier 7	Tier 8
Billed Monthly kWh:	5	15	25	35	45	55	65	75
Input Wattage (kW):	0.015	0.045	0.075	0.105	0.135	0.165	0.195	0.225
Annual kWh:	60	180	300	420	540	660	780	900
Installation Cost								
Conductor and Hardware (Labor & Material):	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94	\$243.94
Pole (Labor & Material):	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57	\$171.57
Luminaire (Labor & Material):	\$545.55	\$592.63	\$639.71	\$686.79	\$733.87	\$780.95	\$828.03	\$875.11
Total Installation Cost:	\$961.06	\$1,008.14	\$1,055.22	\$1,102.30	\$1,149.38	\$1,196.46	\$1,243.54	\$1,290.62
Maintenance Cost								
Annual Maintenance Cost:	\$0.94	\$1.02	\$1.10	\$1.18	\$1.26	\$1.34	\$1.42	\$1.50
Reference LED Luminaire Direct Cost	\$125.00	\$165.00	\$205.00	\$245.00	\$285.00	\$325.00	\$365.00	\$405.00
Monthly Billing Rate:	\$12.59	\$13.38	\$14.17	\$14.98	\$15.78	\$16.58	\$17.37	\$18.17
Four Year Revenue:	\$604.32	\$642.24	\$680.16	\$719.04	\$757.44	\$795.84	\$833.76	\$872.16
"Typical" CIAC Requirement:	\$356.74	\$365.90	\$375.06	\$383.26	\$391.94	\$400.62	\$409.78	\$418.46
Depreciation of Fixed Assets - FERC 373 - 4.27%/Year - 23 Years								
Luminaire life of 70,000 hours - 18 year life span								
Annual maintenance cost based on 3% luminaire failure rate in 70,000 hours								
Installation Costs from 2009 cost of service study:								
WR 6793542 Rev 11 Streetlight Conductor Overhead #4Al Duplex								
WR 6793546 Rev 34 Wood Pole 35 Foot - adjusted to 1/3 of total cost								
WR 6793547 Rev 32 Enclosed Horizontal Luminaire 150 watt and 6 foot arm								
DIRECT MATERIAL COST ADJUSTED TO REFLECT ANTICIPATED LED LUMINAIRE COST THREE TO FIVE YEARS FORWARD								
Annual Maintenance Cost = (Failure Rate X (Replacement \$ Labor + \$ Material) / Material Lifespan Years) + (Relamping \$ Cost/Freq. Years)								

LED Rate Proposals – Comparison of Rates

